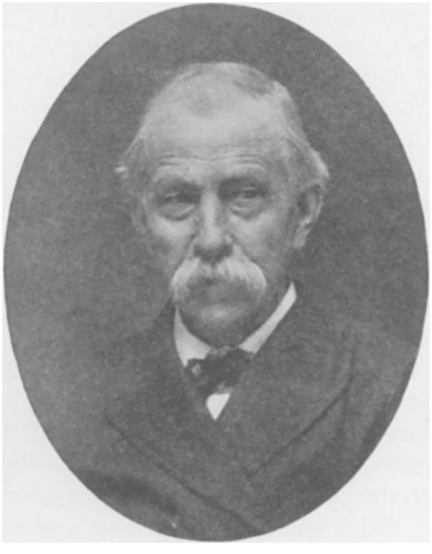
BRIEFER ARTICLES

EDWARD PALMER

(WITH PORTRAIT)

Dr. EDWARD PALMER died at his home in Washington, D.C., April 10, 1911, after an illness of a few days. He was an exceptional explorer and collector, who in the field of botany alone is distinguished as the discoverer of 1,162 new species of flowering plants, with many more of his last collecting still remaining to be described. At least 200 plants discovered by him bear his name, and will continue as witnesses to his wonderful activity.



He was the son of a professional florist and horticulturist, of Hockwold cum Wilton, in the county of Norfolk, England, where he was born January 12, 1831. Coming to this country at the age of 18 he settled at Cleveland, Ohio, where he formed the acquaintance of Dr. JARED KIRTLAND, one of the most eminent scientists of his day, and one of the earliest members of the American Academy of Science. From him he learned the art of collecting and preserving objects of natural history, thus laying the foundation of his future career, and through KIRTLAND'S influence he was in 1853 appointed naturalist of the "Water Witch," on her celebrated expedition to Paraguay, which led to our war with that country.

After his return to the United States, he was appointed collector in the Geological Survey of California, paying especial attention to the marine invertebrates of the California coast. In 1862, when President Lincoln called for extra troops, he offered his services to his country, and

after a time was appointed acting assistant surgeon at various posts in the West and Southwest, continuing to serve after the close of the war on frontier stations in the Indian country in Arizona and the Indian Territory. In connection with his work of attending the sick, he familiarized himself with the properties and uses of the medicinal herbs growing in the vicinity of his station, and he occupied his moments of leisure in making collections of animals and plants for the Smithsonian and other institutions.

In March 1869 he was sent by the Commissioner of Agriculture on a mission to New Mexico and Arizona, to report on the agricultural resources, commercial products, climate, and fertility of the soil, and the general habitable features of the Southwest. He afterward carried on archaeological investigations in southwestern Utah, and made extensive botanical and zoological investigations in that region, assisted in his work by a circular letter given him by BRIGHAM YOUNG. The Commissioner of Agriculture, HORACE CAPRON, in his report for 1870, called special attention to the value of his work, and he was congratulated upon his success by such eminent botanists as Professor ASA GRAY, Dr. TORREY, and Dr. ENGELMANN, all of whom considered themselves fortunate in having valuable material collected by him.

From a scientific point of view, the most important exploration made by him was that of Guadalupe Island, never before visited by a naturalist. The bearing upon evolution of the remarkable fauna and flora of this island in the Pacific Ocean, off the coast of Lower California, is almost as important as that of the animals and plants of the Galápagos Archipelago, as demonstrated by DARWIN. Every bird in his collection from Guadalupe, except a single sea bird, proved to be new to science; and among the plants collected at this time there were 21 new species, the greater part of which have never since been found elsewhere.

Other important collections were made by him in southern California and across the border in Lower California. Here, in a great canyon of the Cantillas Mountains, he discovered a plant which proved to be the type of a new genus, named in his honor *Palmerella* by Professor GRAY, who stated that he did so in acknowledgment of Dr. PALMER'S "indefatigable and fruitful explorations of the botany of the southwestern frontiers of the United States, from Arizona to the islands of Lower California, in which region he has accomplished more than all his predecessors."

The latter part of Dr. PALMER'S life has been devoted chiefly to exploration in Mexico, and the results have been published chiefly in

the Proceedings of the American Academy of Arts and Sciences, and in the publications of the United States National Museum. His collections, both botanical and ethnological, have been remarkable, not for the prettiness of the various objects, but for the completeness of the material and the care shown in his notes.

He continued his chosen work to the very end. His last exploration was in 1910, in the vicinity of Tampico, on the gulf coast of Mexico. After his return he occupied himself in assorting and distributing his material. On the occasion of the eightieth anniversary of his birth, the Botanical Society of Washington held a special meeting in his honor, at which a paper on his life and work by the author of the present sketch was read, together with letters written by various eminent men of science not residing in Washington. During the meeting of the society Dr. PALMER was seated in the place of honor, and at the close of the exercises he was presented with an appropriate birthday gift as a token of the appreciation of the members of the society of his important life-work. The venerable traveler received the congratulations of those present with tears streaming down his cheeks, doubtless realizing that this must be his valedictory.—W. E. SAFFORD, *Department of Agriculture, Washington, D.C.*

DEHYDRATING WITH ALCOHOL

(WITH FOUR FIGURES)

The difficulty which undergraduate students who take courses in histology find in giving regular attention to dehydration, led me to a search for an automatic method. Osmotic means were rejected because they are uncontrollable and give no indication of the stage of the process. Work on the principle of slowly adding alcohol of increasing strength to the tissue developed the simple apparatus shown in fig. 1. During the past two years this apparatus has been used for dehydrating all kinds of plant tissue for histology and embryology. It has also been used instead of glycerin in preparing algae to be mounted in Venetian turpentine.

The alcohol from the supply bottle drops from the lower end of the "capillary" *v* into the thistle tube, which conveys it to the bottom of the mixing tube *B*. The alcohol diffuses with the water in *B*, and the increase in volume is carried to the dehydrating tube *C* through the connecting tube *x*. Naturally, as more alcohol is added to *B*, the strength of the liquid passing into *C* increases, but as that in *B* is always